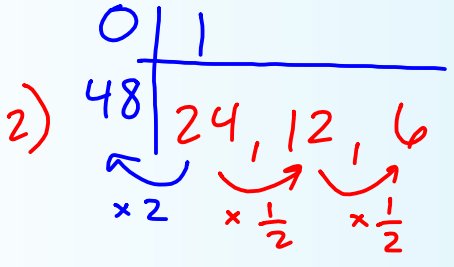
Alg. 2 Warm Up # 4-2

1) Write an equation for the n^{th} term of the sequence.

n	t(n)
1	6
2	1.5
3	0.375
4	0.09375
n	?

2) For the sequence defined by: t(n) = 3n - 2,
is it possible for 46 to be a term?
If so, which term is it?

HW Questions:



$$t(n) = 48\left(\frac{1}{2}\right)^n$$

HW Questions:

8) $21x^2 + 7x = 0$

$7x(3x + 1) = 0$

$7x = 0$

$\boxed{x = 0}$

$3x + 1 = 0$

$-1 \quad -1$

$3x = -1$

$\boxed{x = -\frac{1}{3}}$

Find the equation for the Arithmetic Sequence

$t(n) = dn + a$

common difference (like slope)

n	t(n)
3	4
8	19
23	64
n	?

n	3	4	5	6	7	8
t(n)	4					19

5 jumps of add d

Find the equation for the Arithmetic Sequence

$t(n) = dn + a$

common difference (like slope)

n	t(n)
3	4
8	19
23	64
n	?

n	3	4	5	6	7	8
t(n)	4					19

5 jumps of add d

So: $4 + 5d = 19$

$5d = 15$

$d = 3$

n t(n)

(8, 19)

$t(n) = 3n + a$

$19 = 3(8) + a$

$-24 \quad -24$

$-5 = a$

Find the equation for the Arithmetic Sequence

$t(n) = dn + a$

common difference (like slope)

n	t(n)
3	4
8	19
23	64
n	?

n	3	4	5	6	7	8
t(n)	4					19

5 jumps of add d

So: $4 + 5d = 19$

$5d = 15$

$d = 3$

$t(n) = 3n + a$

Can go backwards to find the zero term, a.

n	0	1	2	3
t(n)	-5	-2	1	4

-3 -3 -3

$t(n) = 3n - 5$

Find the equation for the Arithmetic Sequence

$t(n) = dn + a$

n	t(n)
3	4
8	19
23	64
n	?

n	
t(n)	

or:
think of this as a line

d = slope, so $m = \frac{y_2 - y_1}{x_2 - x_1}$

$d = \frac{19-4}{8-3}$

$d = \frac{15}{5}$

$d = 3 \rightarrow t(n) = 3n + a$

plug in a point $(n, t(n))$ from table to find a.

Find the equation for the Geometric Sequence

$t(n) = a(b)^n$

↑ common multiplier

n	t(n)
2	18
5	486
7	4374
n	?

n	2	3	4	5
t(n)	18			486

×b ×b ×b

$\frac{18b^3}{18} = \frac{486}{18}$

$\sqrt[3]{b^3} = \sqrt[3]{27}$

$b = 3$

Find the equation for the Geometric Sequence

$t(n) = a(b)^n$

common multiplier

n	t(n)
2	18
5	486
7	4374
n	?

n	2	3	4	5
t(n)	18			486

×b ×b ×b

$18b^3 = 486$

solve

$b = 3$

$t(n) = a(3)^n$

Now you can either:

① Go backwards (÷3) to find zero term, a.

or ② Plug in a point (n, t(n)), from your table to find a.

You try:

Find the equation for the Geometric Sequence

$t(n) = a(b)^n$

$t(n) = \frac{1}{2}(4)^n$

n	t(n)
1	2
4	128
6	2048
n	?

n	1	2	3	4
t(n)	2			128

÷4 ×b ×b ×b

$2b^3 = 128$

$\sqrt[3]{b^3} = \sqrt[3]{64}$

$b = 4$

Another Geometric Sequence:

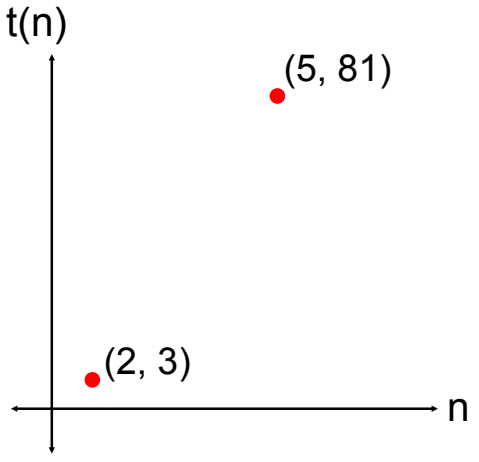
$t(n) = a(b)^n$

n	2	3	4	5
t(n)	3			81

×b ×b ×b

$3b^3 = 81$

$b = 3$



Now plug in (2,3) to find a or go backwards to zero term.

HW: Sequence worksheet # 2
(Salmon colored)

Wednesday's short quiz:

Quick Line Graphs

Solve with x in denominator

Zero Product Property